Response to December 30, 2015 Alleged Violations Letter and March 1, 2016 Administrative Penalty Order – U. S. Steel Minntac NPDES/SDS Permit No. MN0057207

The following summarizes the underlying circumstances, and actions taken, relative to a discharge of collected seepage water through permitted Outfall SD002, which was subsequently the subject of a December 30, 2015 Alleged Violations Letter (AVL) and March 1, 2016 Administrative Penalty Order (APO) issued to U. S. Steel (USS) by the MPCA. Through the AVL, MPCA requested a written response detailing the measures that will be taken to ensure compliance with the permit if/when maintenance of the Seep Collection and Return System (SCRS) occurs in the future. The MPCA also requested that the response include alternative measures to avoid discharging through Outfall SD002.

The SCRS operating on the east side of the Minntac tailings basin is the first of its kind in the industry, and to our knowledge, the only system of its kind in the entire region. The system has operated as designed since installation in 2010 and start-up in 2011, i.e., collecting tailings basin surface and shallow subsurface seepage that previously flowed to the Sand River Watershed and returning that water back to the Minntac tailings basin clear pool reservoirs. The system was designed with redundant pumping capabilities at each of the two return pump stations to ensure that maintenance could be completed as needed and peak inflow events could be handled. The operational issues that ultimately resulted in the need for the brief unplanned period of discharge at the Outfall SD002 location were never envisioned, never encountered before, not the result of poor operation or maintenance practices, and took over 4 years (since the start-up of the SCRS) to develop.

USS began to notice a reduction in flow out of Pump Station 1 and made plans for maintenance of the pumps. To facilitate removal/replacement of the pumps, water levels in the wet well must be brought down and controlled. However, due to the reduction in pump capacity and the continuous inflow of water entering the wet well, there was no mechanism to reduce water levels in the wet well and hydraulically-connected valve vault to safely inspect the system or access the pumps. Since the system was designed with redundant return pump capacity, no provisions were included in the design to slow or stop the inflow at upstream collection points so that maintenance activities such as those that ultimately followed could be performed. It was imperative that water levels in the wet well/valve vault be reduced and held at those levels for the maintenance activities to take place. Therefore, an external, diesel-powered pump was obtained to accomplish the required water level reduction. However, the combination of large discharge head (~95 ft) and loss of suction as the water level dropped made this alternative ineffective. To allow the corrective procedure to proceed before an uncontrolled release of collected surface seepage to downstream wetlands occurred, the short-duration, controlled release into the Sand River through the former site of SD002 was conducted where flow was measured and water quality samples collected as per the current permit requirements.

The pump removal/replacement procedure resulted in increased discharge capacity sufficient to return the collected seepage, but full design discharge capacity was not achieved. It was then suspected that fouling of the discharge lines downstream of Pump Station 1 was limiting the full discharge, and in particular the smaller diameter discharge lines associated with flow meters and check valves in the valve vault. Line cleaning procedures via high pressure water jetting were immediately arranged, completed the next day and returned the system to its original state of operation.

USS performed the repair work in the most efficient way possible to minimize the duration of the outage, limit the amount of water discharged through Outfall SD002 and minimize any potential environmental impacts, as well as to protect the safety of USS employees. Because the SCRS system

operates continuously, there was no way to inspect or know what was happening inside the wet well or discharge lines. The fouling issue was never identified during system engineering or by any of the original equipment manufacturers and therefore jetting of the discharge lines was never identified as a required maintenance activity. As this is an innovative system that does not exist elsewhere, all potential operational and maintenance issues could not be known prior to startup. A learning curve was expected and although routine maintenance occurred on the system we continue to learn and adjust practices to ensure efficient operation in the future.

Since this issue was encountered several corrective actions have been implemented to eliminate the discharge of collected surface seepage from the SCRS through Outfall SD002 due to future preventive maintenance activities. Specifically, redundant standby discharge pipes have been installed over the perimeter dike at each of the two return pump stations to allow for the return of collected surface seepage around the valve vault and original return lines back to the tailings basin reservoirs. Dedicated standby pumps have been procured and installed in each pump station to control wet well water levels during maintenance periods. Discharge lines from the pump stations are now being jetted on a regular, approximately twice-per-year basis to ensure unrestricted discharge flow. Clean-outs have been installed in key locations along long runs of gravity-flow pipe to facilitate line cleaning. And, the system is being placed in queue for evaluation by Minntac's new Reliability Centered Maintenance group to identify any additional preventive maintenance activities that may be appropriate.

The current NPDES permit is very confusing with respect to the SCRS and Outfall SD002. The permit does state that the SCRS was installed and effectively eliminated flow through Outfall SD002, which it has. However, the current permit lists Outfall SD002 as an authorized discharge point with associated discharge limits. In addition, a pre-public notice Draft NPDES Permit received from MPCA in December 2014 included Outfall SD002 as a discharge point, although the SCRS was fully operational prior to this Draft being issued. The Draft Permit does not reference a discharge through this Outfall as unauthorized, further complicating MPCA's view of this Outfall after full installation and operation of the SCRS.

The AVL states that '…MPCA staff provided consistent notification to the Regulated Party that reasonable alternatives to bypassing exist during maintenance or other activities and that a bypass would not be authorized.' USS is not aware of any alternatives to bypassing that have ever been presented by MPCA. We would welcome the information if MPCA would be willing to provide it. MPCA and USS had previously discussed maintenance and the potential need to discharge water. USS's understanding of those conversations was that discharge would not be allowed during regular maintenance activities, and it hasn't. For over four years maintenance activities have successfully occurred without discharging off site. However in this case, due to the unplanned, unavoidable nature of the issue, in order to return the system to proper operation, a brief, controlled discharge was required. The AVL also states that '…on a separate occasion, MPCA staff informed USS staff that a proposed discharge of groundwater from a monitoring well as part of a draw down pump test would not be authorized by the permit…and further indicates the consistent position of the MPCA on any proposed discharge.' However, the pump test request was not associated with the SCRS in any way and was contradictory to the allowance of groundwater discharges from concentrated dewatering during installation of the SCRS infrastructure during system construction in 2010.

USS considered the June 2015 event as an authorized discharge through a permit-defined outfall. During the discharge in question, all sampling required by the permit for Outfall SD002 was completed and reported in the June DMR. In addition, the AVL references a September 8, 2015 email from MPCA (John

Thomas). In that email USS was provided guidance that the DMR was improperly calculated for flow and a request was made to amend the DMR which was done the next day. MPCA also indicated 'There should have been advance notification of the intent to discharge (Chapter 7 Part 9.1)' which would have essentially constituted a bypass event. However, the AVL states that Chapter 7 Part 9.1 is not applicable to the referenced discharge. These contradictory statements further enforce the confusion and uncertainty regarding the current NPDES permit.

The brief, controlled discharge was reported in the June 2015 DMR as 0.19 MGD (190,000 gallons), with accompanying sampling to demonstrate compliance with permit limits and monitoring requirements. To put this into perspective, this volume of discharge conservatively represents approximately 15% of the tailings basin seepage still entering the Sand River Watershed via groundwater and this volume of discharge is less than 0.01% of the total volume of surface seepage that has been collected and returned to the tailings basin clear pool reservoirs since implementation of the SCRS.